

# **Just Listen:** Engaging Youth in Soundscape Research at Rocky Mountain National Park

(Social) Science Behind the Scenery Series

Beaver Meadows Visitor Center

July 23, 2015



Karen S. Barton

Associate Professor of Geography and G.I.S.  
University of Northern Colorado

## \*\*\*\*Caveat: A Work in Progress\*\*\*\*

1. RMNP Research Permit Approved: June 25, 2015
2. Global Soundscapes Network Workshop held in Nebraska and South Dakota: July 2015



3. Field Work Begins July-August 2015
4. Building upon previous work in RMNP and along the Poudre River Watershed

# Our guiding questions:

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- (1) Do sound based methodologies help to engage young people with nature?
- (2) Does being involved in the process of sound research help connect people to the parks and natural areas?
- (3) Do acoustic resources have the same attraction as visual resources?

# Geographical Inspiration

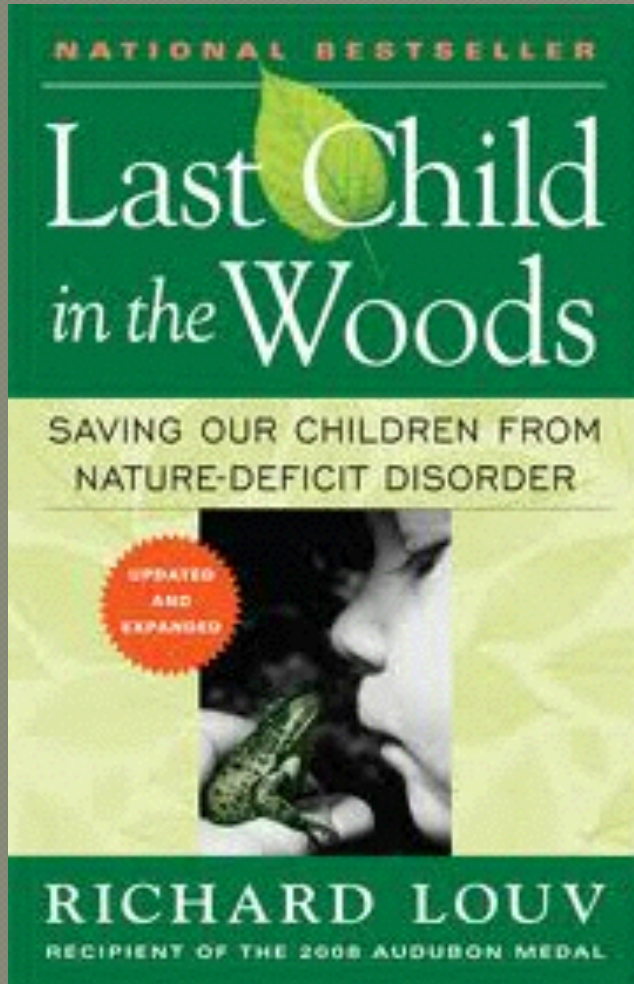
- Guerilla Geography: involves the desire to change places by occupying them across political, cultural, legal or emotional lines, to emphasize geo-literacy through backyard exploration (Daniel Raven Ellison).





# Journalistic Inspiration:

## Last Child in the Woods (Richard Louv) 2006



•**Research** was inspired by Louv's landmark research which explored the forces that have contributed to young peoples' (BY: 1984-2004) "disconnect with nature".

(1) Technology has been vilified for its role in *nature deficit disorder* (the outdoor to indoor migration).

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## (2) The Power of Suburban Neighborhood Covenants: Fort Against City Code Lee's Summit, Missouri

Chrome File Edit View History Bookmarks People Window Help

City of Lee's Summit forces kids to tear down fort

Posted: Jan 17, 2014 2:15 PM MST  
Updated: Feb 16, 2014 6:21 PM MST

By Laura McCallister, Multimedia Producer **CONNECT**

LEE'S SUMMIT, MO (KCTV) - A group of [kids](#) learned a hard lesson about city codes Friday. Lee's Summit had to demolish the kids' creation because it wasn't compliant.

It all started with kids grabbing some scraps of wood and learning together how to build something, but Friday the Bobcats taught them a different lesson: you can't always keep what you want.


With a hammer in his hand, Myers Sharp and his buddies aren't just kids, they've got a [job](#) to do.

"Building, shoveling, and hammering," Ben McClure said.

The Pergola neighborhood kids built a fort on an empty lot with scraps from construction on the surrounding larger homes.

"They don't care what it looks like. It's not about outer beauty, it's about the [fun](#), the cohesion between the kids," said neighbor Chris Pate.

how it looks. The city of Lee's Summit got an anonymous complaint about the





### (3) Fear of the Bogeyman (Razor blades in apples and Candy Scare of the 1980s)



I'm not scared of  
razor blades in apples  
because my kids  
never eat fruit.



som<sup>ee</sup>cards

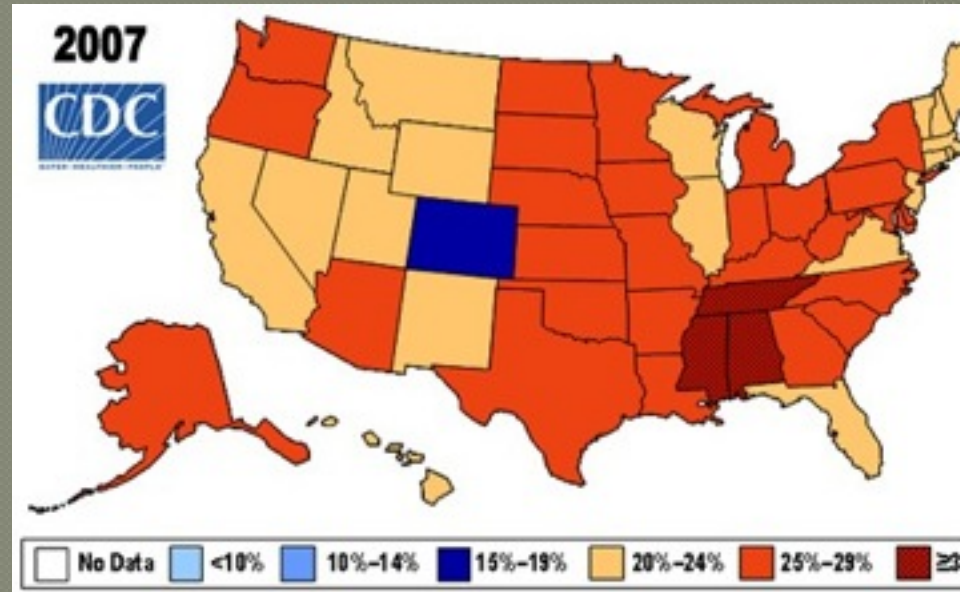


(4) Children's use of space has changed from being primarily outdoors to primarily indoors and supervised (more structured activities like soccer outdoors).

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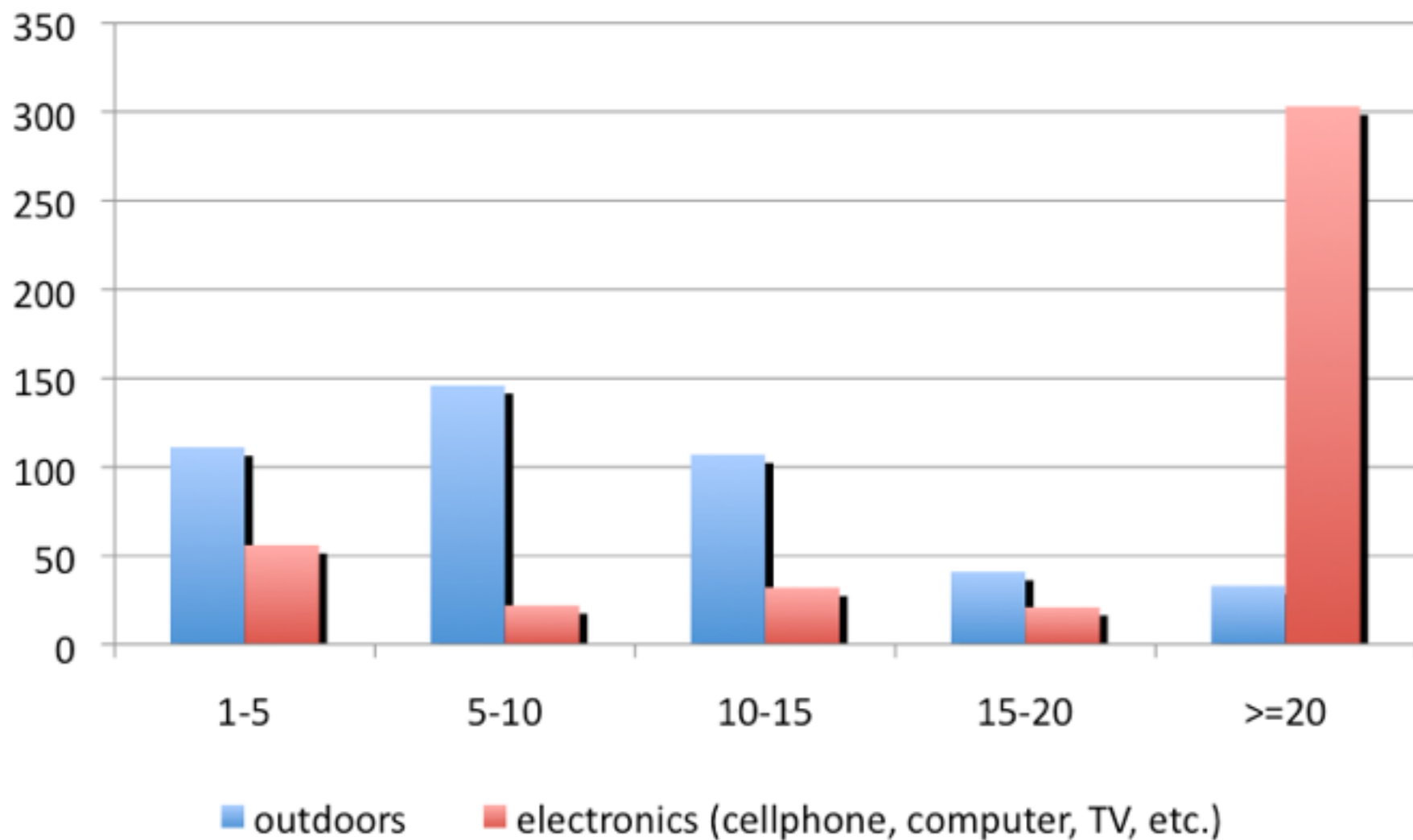
Is the story in colorful and fitness conscious Colorado different than what Richard Louv depicts in his work?



We thought it might be, and in 2011 we conducted survey of 440 university students (millennial aged) in northern Colorado.

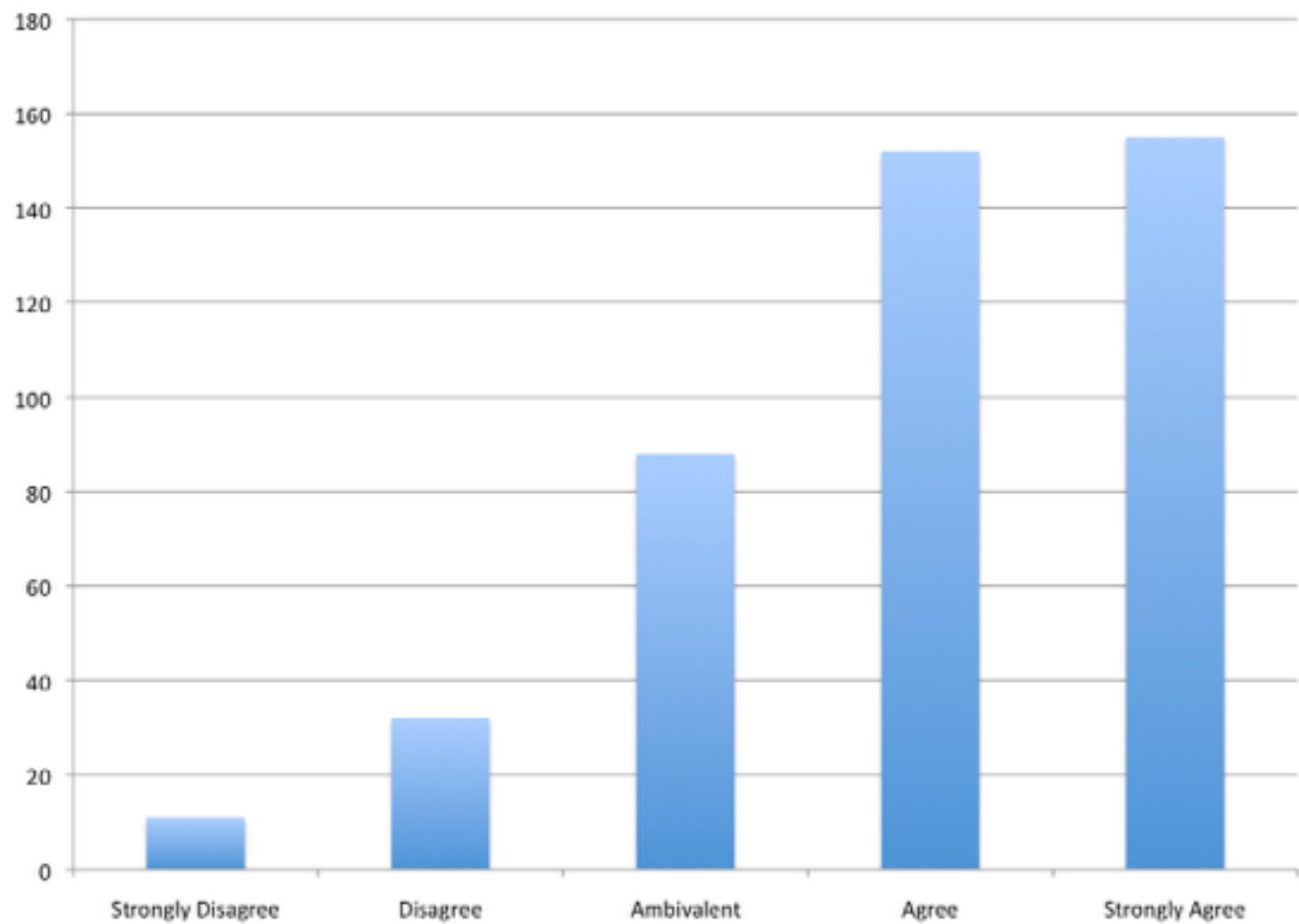
Barton, K. (2011) Journal of Geography.

**N= 440 (Time spent outdoors/  
time spent with media)**



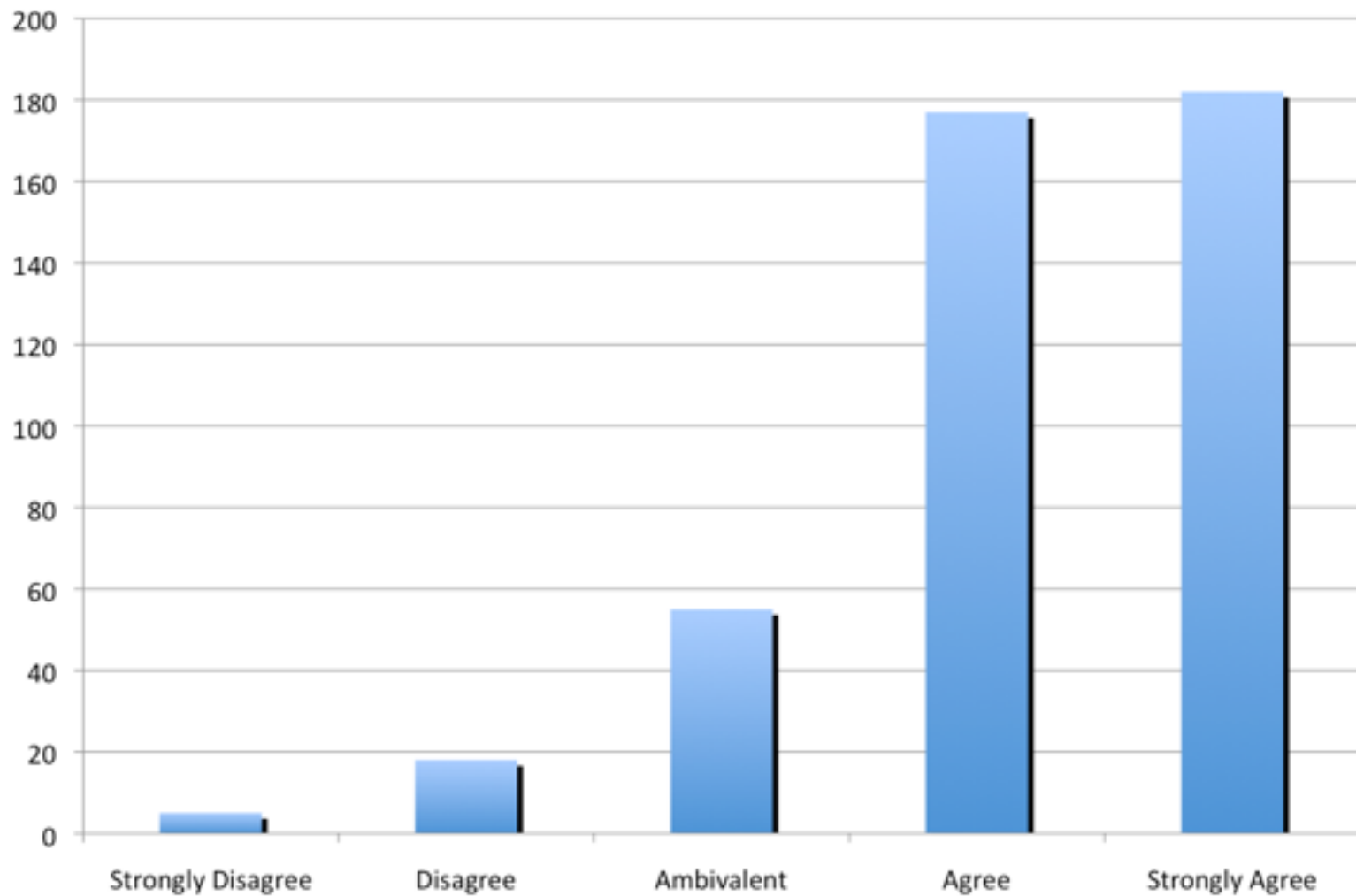


### **I would like to spend more time outdoors.**

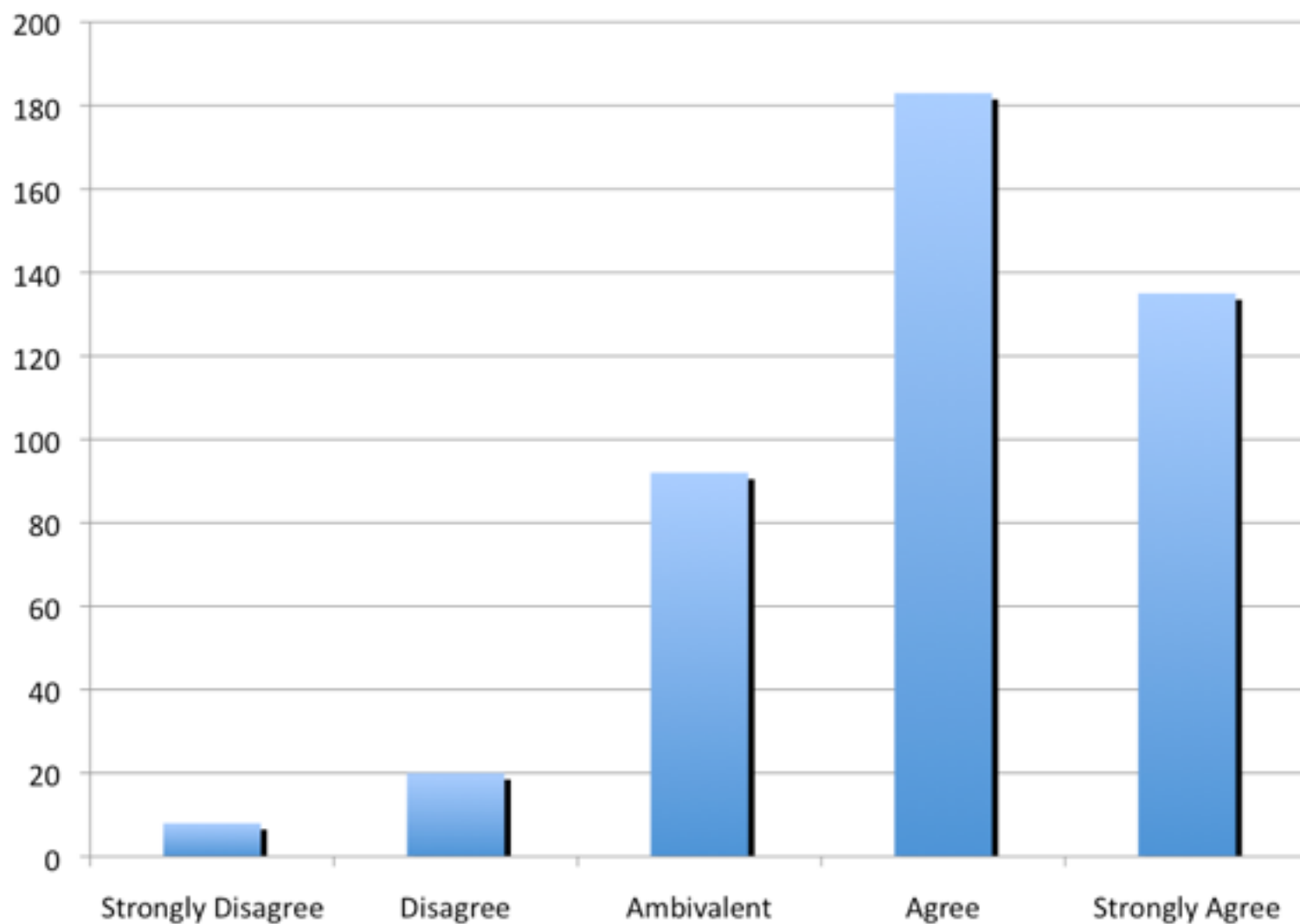




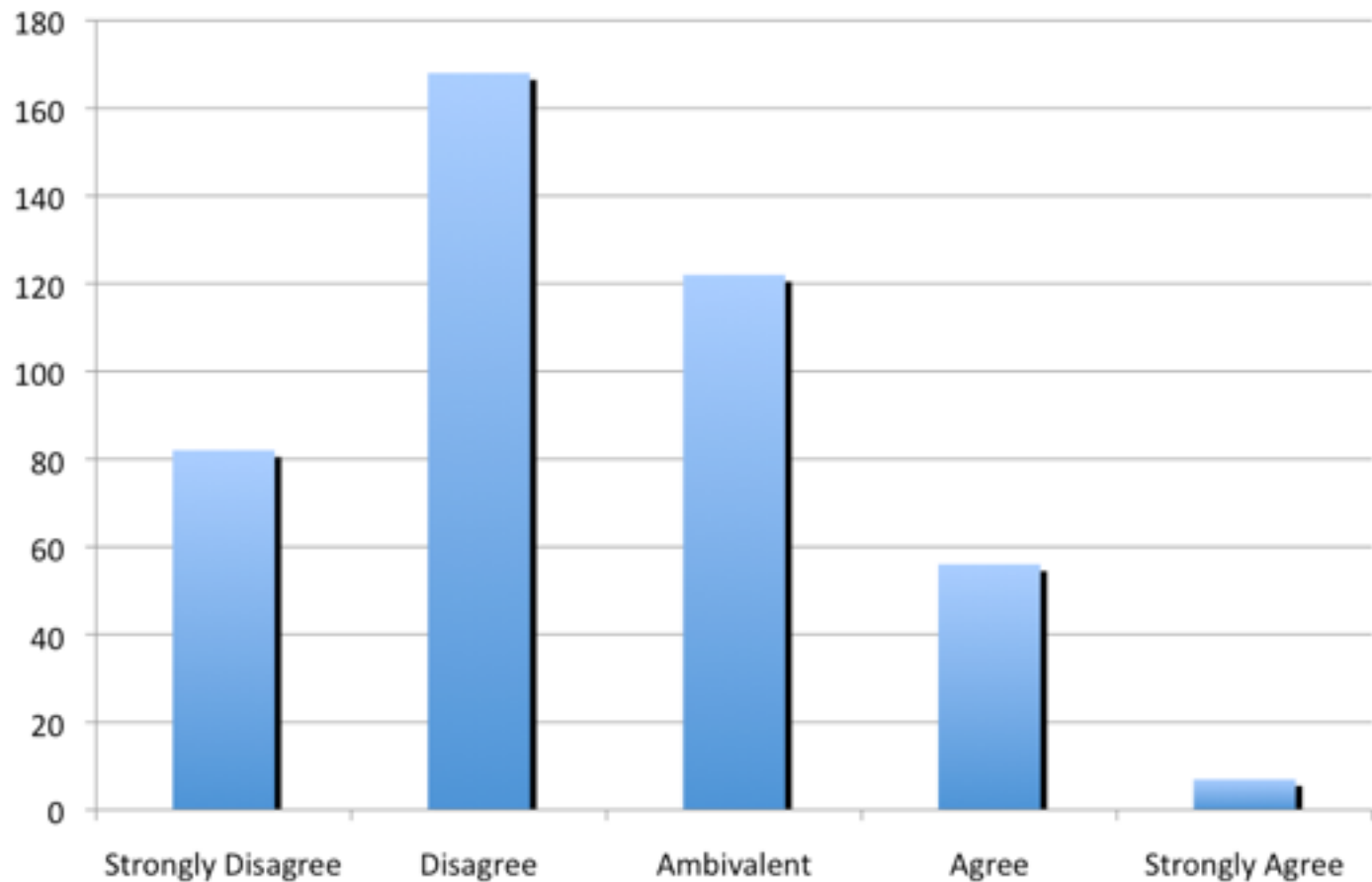
## I would like to spend more time visiting US National Parks.



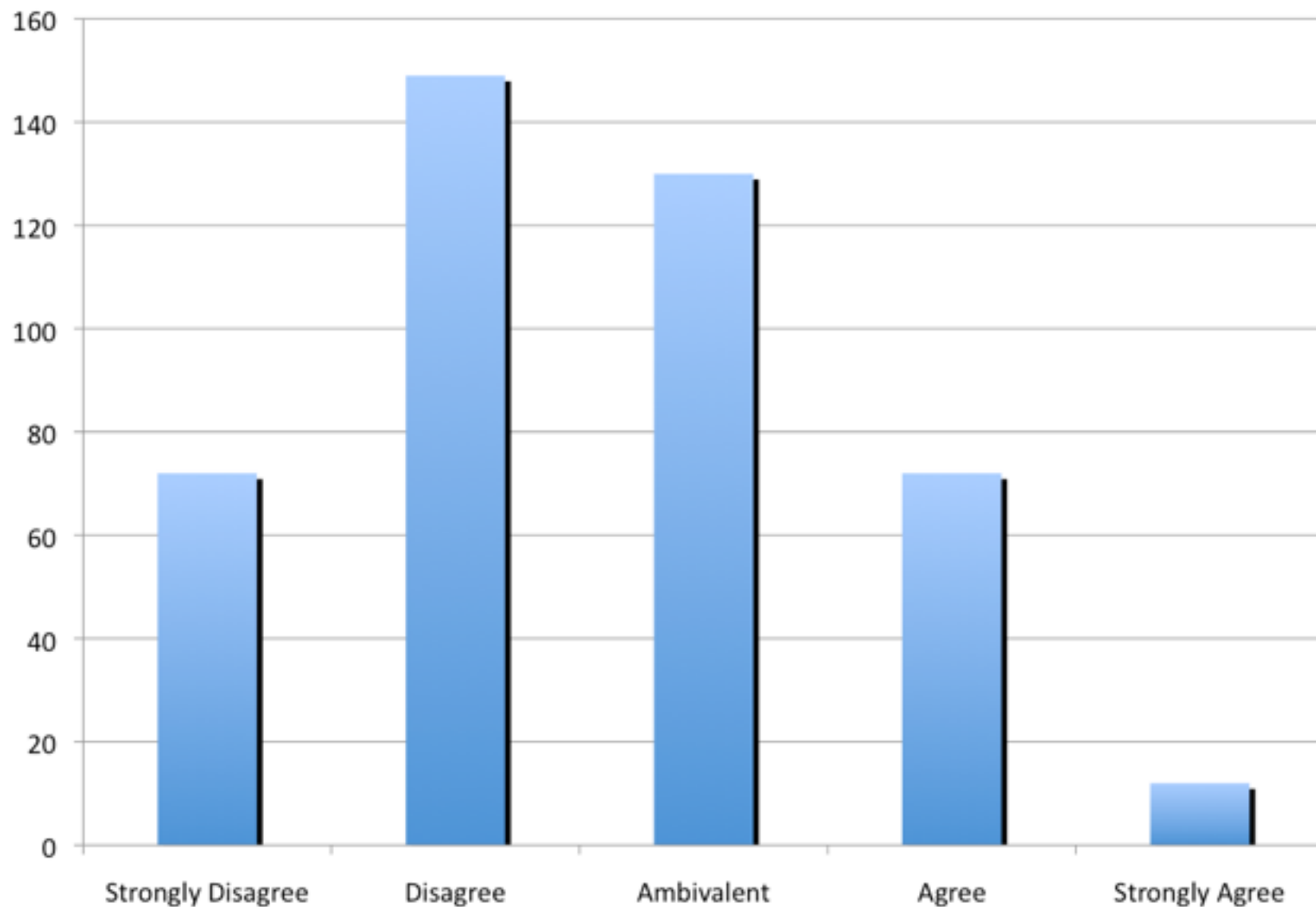
## I would like to spend more time visiting Rocky Mountain NP.



## National Park webcams provide a good alternative for those who cannot visit parks.



## DVDs and TV are a good substitute for actually being there.





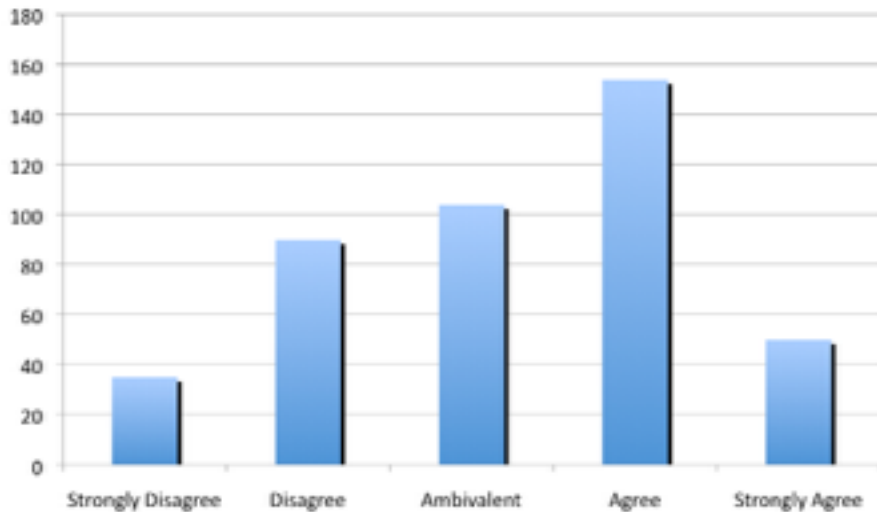
This really got us thinking about  
senses and park experiences.  
The visceral part of being there.



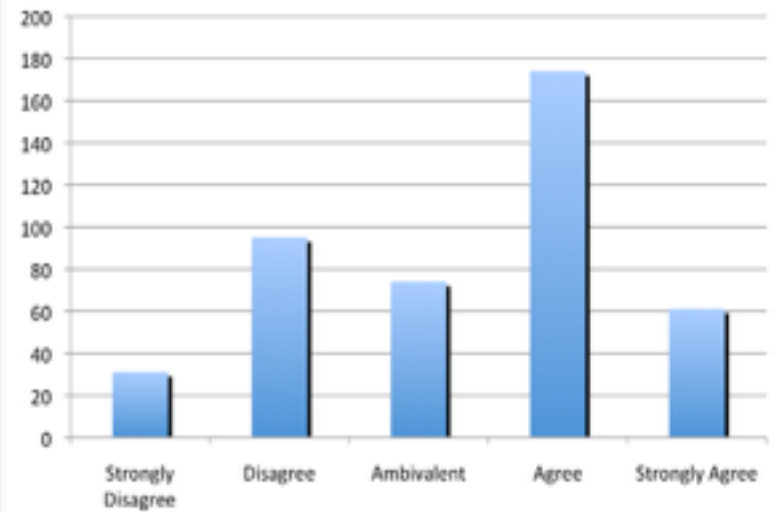
## Take Home Story:

Young people want to enjoy parks and protected areas in real time but feel certain temporal and financial constraints. AND:  
“I can only go to RMNP as part of a class”-  
need for STRUCTURE.

**Cost gets in the way of my visiting National Parks and public lands.**



**Transportation gets in the way of my visiting National Parks and public lands.**



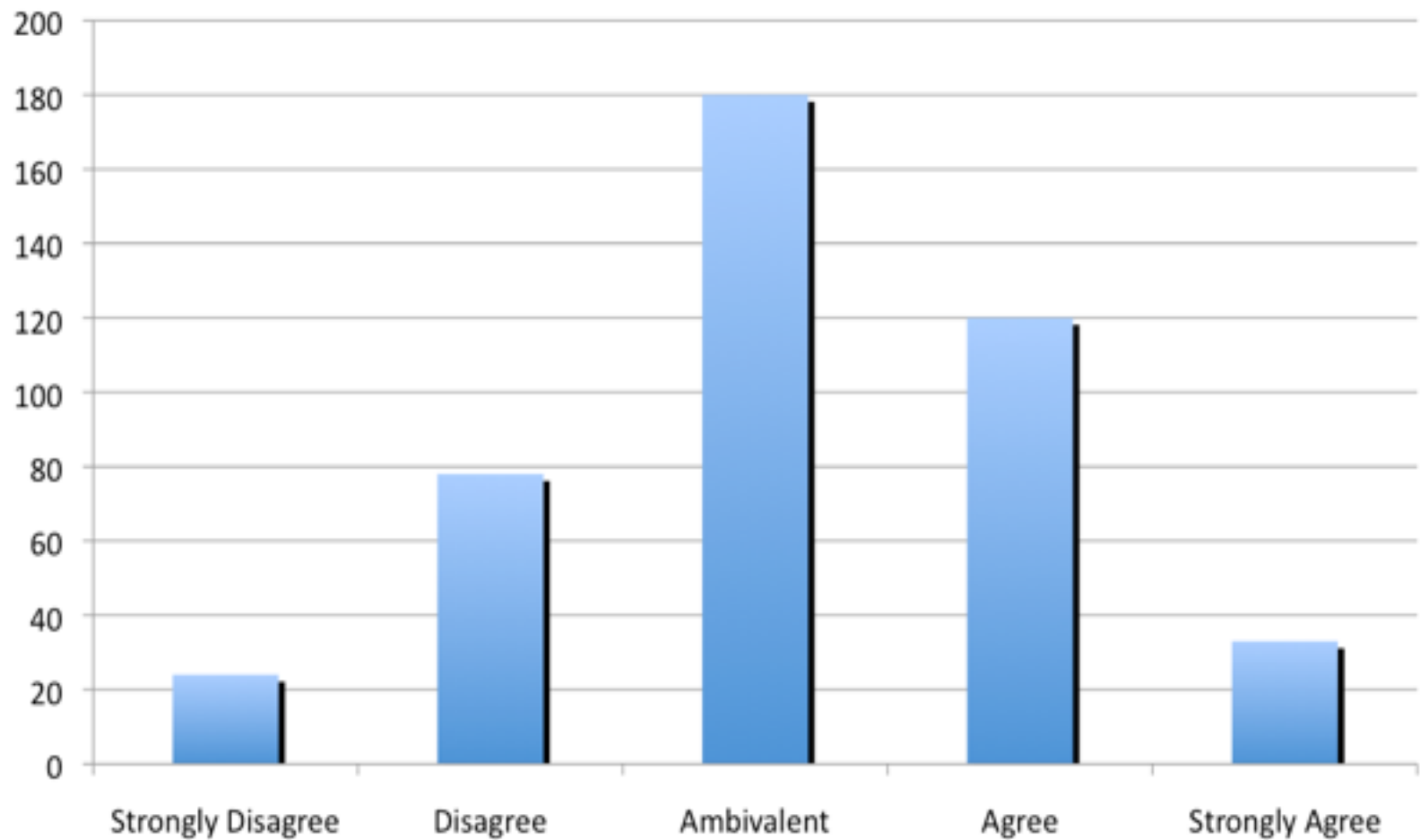
# Solutions? Citizen Science/Active Learning

- Yet research shows that citizen science and active learning (such as Project Noah- documenting nature with your phone) which utilize technology to engage young people in nature can be very effective.



<http://www.projectnoah.org/>

## I would be interested in getting involved in citizen science projects on public lands.





**Project Noah** is great but our research shows that young people are over saturated with images. Why not focus on a different sense?

“When you get a new cell phone and it just has the default screens on it, and before you’ve taken any of your own photos, you can see the backgrounds, the wallpapers of nature scenes of different seasons and trees, and you think how beautiful it is on this tiny little screen. We could be looking at the cell phone while we’re outside standing next to a real tree, but somehow it is just as beautiful, maybe even more beautiful, on the screen. I can’t explain it.”

# Artificial nature can “give us more” than reality can.

“I love nature and national parks and certainly want to spend more time out in the wild but when I was a kid I didn’t have much experience in the outdoors. I remember a strange experience, I had been to Disneyland and rode the Big Thunder Mountain Railroad ride, which is a southwest themed ride, decorated with red rocks and desert plants. Years later I traveled to Arizona and did a hike. I remember telling a local friend that “Wow, this looks just like Disneyland”. It was difficult to believe that the real desert rocks weren’t artificial. In the end, had it not been for the desert scents and sounds of Tucson, I couldn’t tell the difference.”

# What we do/how we do it:

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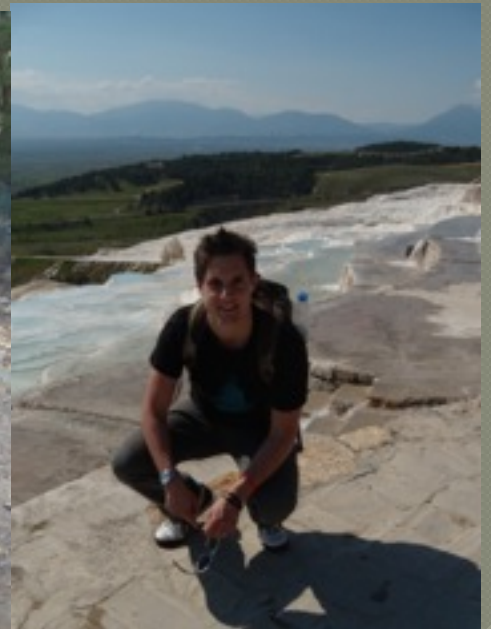


- Psst: Reminder: Our research is not just about the sounds.
- It's about understanding how young people engaging in soundscape research develop a sense of place in national parks and protected areas and learn to crave and create more outdoor experiences.

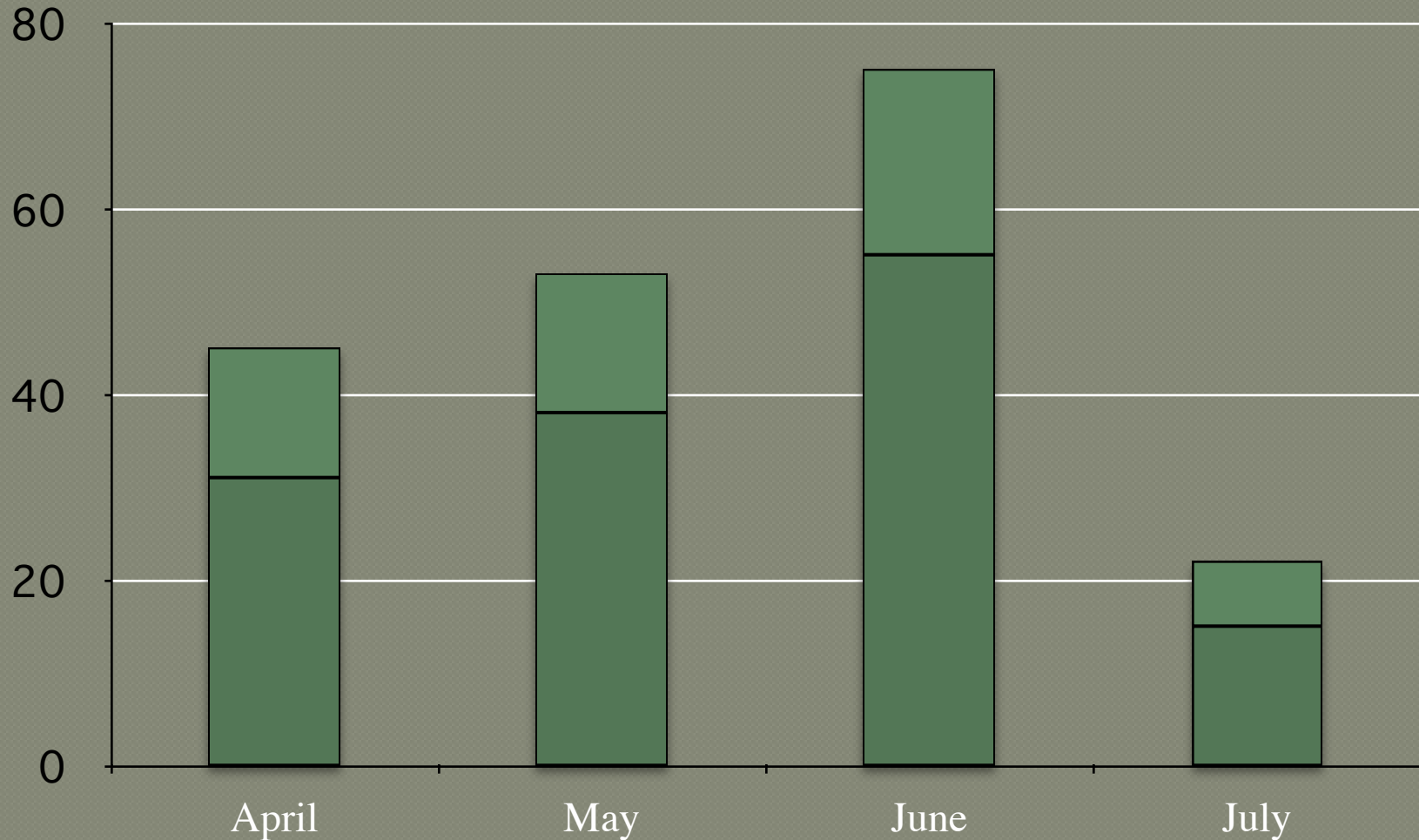


# (1) Undergraduate Sound Team

Team includes majors self-selected from various schools and programs (nursing, environmental studies; geography, biology, theatre, business) as well as those with varying levels of experiences in the outdoors. **Wilderness First Aid Training and Wilderness First Responder.**



# Number of youth project participants (as of: 7/15/15)





# We are part of a larger network based at Purdue: GSSN: Sonoran Soundscapes

[https://www.youtube.com/watch?v=CzljL\\_7ygzk](https://www.youtube.com/watch?v=CzljL_7ygzk)





## Schulze *Speaker* Series

**DR. BERNIE KRAUSE**  
FOUNDER, WILD SANCTUARY

# THE SOUND AND THE FURRY:

Recording the Natural World  
Through Soundscape Ecology



**TUESDAY, OCTOBER 22, 2013**  
**7 PM**  
**BALLROOM**  
**UNIVERSITY CENTER**

Tickets will be free through the UC Box Office and the event is open to the public.

**SPONSORED BY:**  
The Schulze Fund for Interdisciplinary Studies  
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UNIVERSITY OF  
NORTHERN COLORADO

Bringing  
education  
to life.

**(2) Sound Campaign at UNC:**  
Launched a Soundscape Initiative in  
2012 featuring soundscape  
ecologist pioneer  
Dr. Bernie Krause.





# (3) The HOW to (technology varies):

## Song Meter 2: static sensor deployed to understand acoustic changes over time

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- Dr. Bran Pijanowski with
- Song Meter 2.



# Mobile Devices

- We use ipads with blue mikeys and windscreens and then utilize **Oxford Wave Research** ipad app which allows 15 second intervals and spectrogram analysis
- **advantage:** less expensive, not having fixed equipment on site given research permit limitations but **disadvantage:** can't record remotely (maximize dawn and dusk chorus)

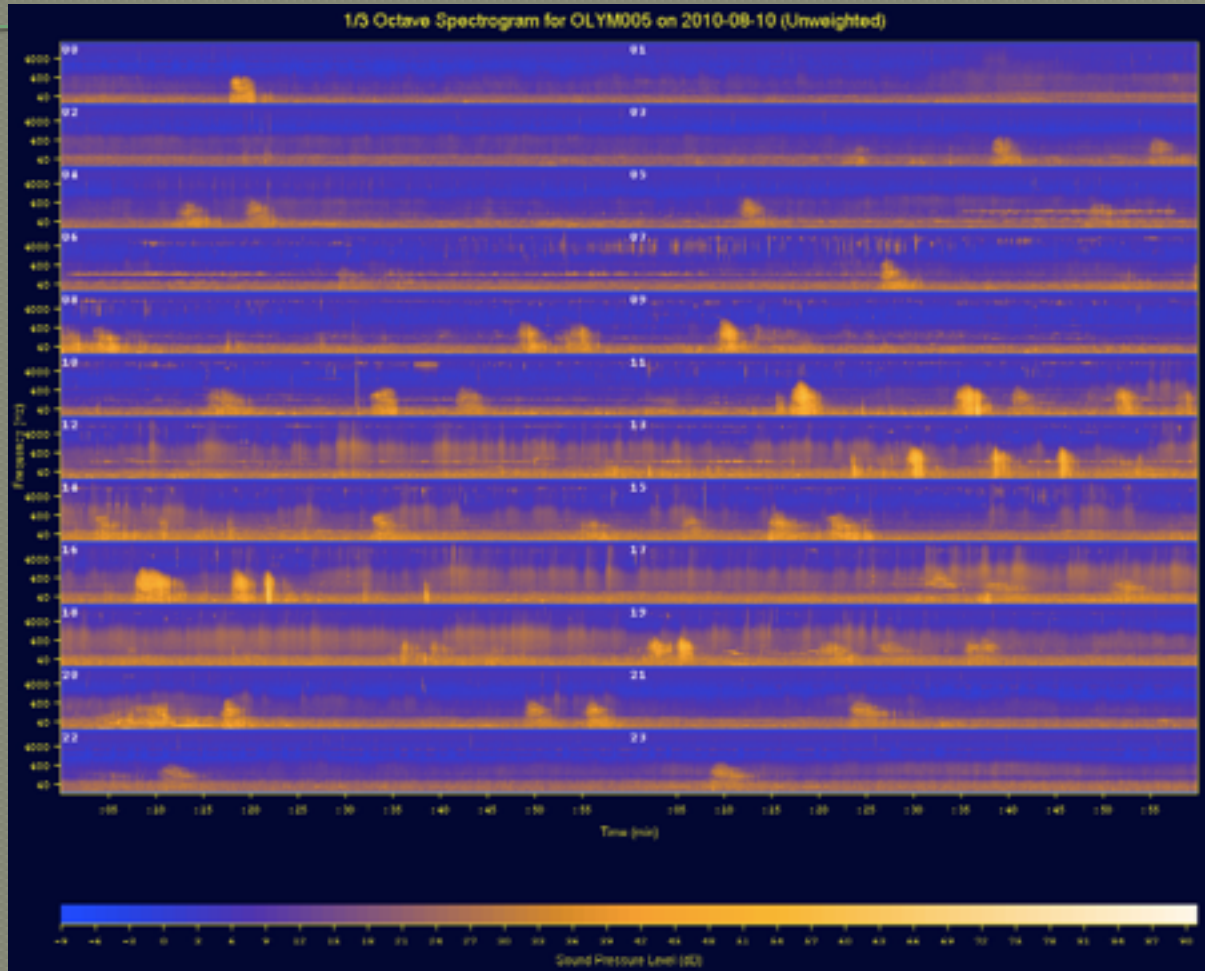




Bernie Krause examines a spectrogram for bandwidth frequency in a Borneo rainforest.



Spectrograms illustrate frequency (y axis), time (x axis), and amplitude (brightness of color) and different sounds occur in different frequencies. Animals evolved to fill certain sound niches.



This spectrogram displays 24 hours of sounds from Olympic National Park. Each row displays two hours of acoustical data, beginning and ending at midnight



# Global Soundscapes App: uploads location and how sound “makes user feel”



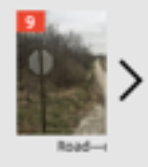
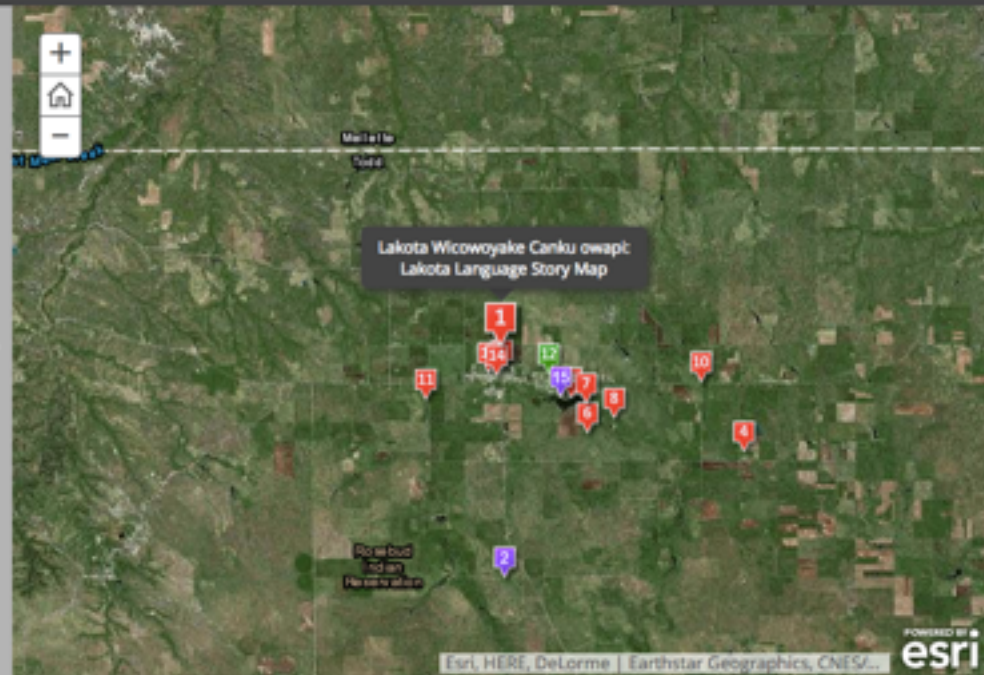
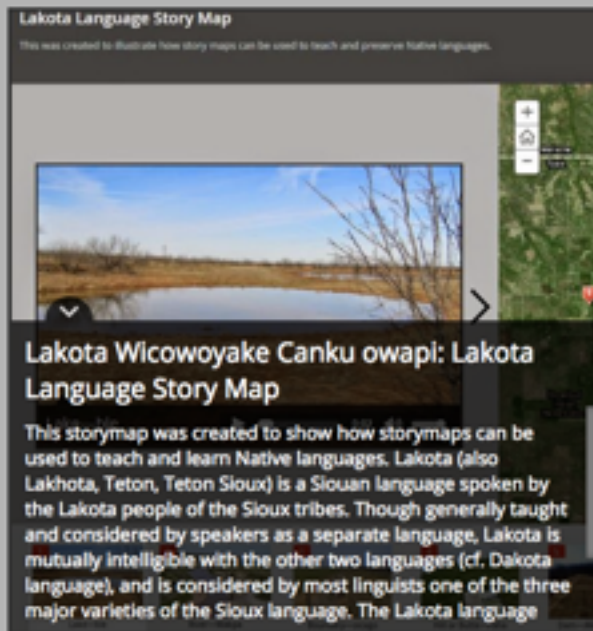
# Our Project: Sound Mapping

ArcGIS Story Maps using audio  
(challenges and limitations)

## Lakota Wicowoyake Canku owapi: Lakota Language Story Map

A story map [f](#) [t](#) [e](#)

This was created to illustrate how story maps can be used to teach and preserve Native languages.





# BUT! Mercator: Manipulating Maps as Power



- The distortion is the result of the Mercator map which was created in 1596 to help sailors navigate the world
- It gives the right shapes of countries but at the cost of distorting sizes in favour of the wealthy lands to the north
- For instance, north America looks larger, or at least as big, as Africa, and Greenland also looks of comparable size
- In reality, you can fit north America into Africa and still have space for India, Argentina, Tunisia and some left over
- Map suggests Scandinavian countries are larger than India, whereas in reality India is three times the size

# Our Project Along the Cache la Poudre Focuses on ALL sounds.

## Project Purposes:

1. Expose children to acoustic diversity of the CLP corridor
2. Unravel social construction of “wild and scenic” to include industrial development
3. Shift youth’s sensory experiences to include the acoustic environment

## 3rd-5th Grade Classes at Poudre River Institutions:

Tavelli Elementary, Rivendell Elementary, Timnath Elementary, Mountain View Elementary, Billy Martinez Elementary

## Project Phases

1. Wilderness First Aid -Wilderness First Responder for PIs.
2. Classroom visits to discuss history and perceptions of Poudre River
3. Seasonal site visits with students/teachers (4 each)
4. Classroom soundscape equipment training with teachers/kids
  - Spectrum View/Oxford Wave Research app
  - (15 sec recordings, spec analysis)
5. Field visits to river sites adjacent to schools: (1) soundscape recordings; (2) journals and sketches and (3) photography



# Sample Poudre River Soundmap

- [soundmap example](#)



**Poudre River, Fort Collins**  
**Spring Creek Trail: Flood Stage 05.04.14 (9.05 ft. 3580.00 cfs)**







what's this?

# What our students say about the project:

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- (a) “I guess you could say I had an epiphany with this project. With our previous citizen science projects we’d collect photos and I’d think about ways I could share those photos on Facebook or some other social media. I was never in the moment while taking photos, if that makes sense. I was truly in the moment. Those sounds were my sounds. It was strangely visceral. ”
- (b) “I feel selfish about these recordings. We’ll be posting them on Soundcloud as part of our project but let’s just say I’m thankful that there is no sound equivalent to Facebook .”
- (c) “Our cohort really connected throughout this field project. I know it sounds cliché, but I came in better touch with one of my senses. I’m definitely a better listener, not just with nature or human caused sounds but I appreciate the voices of my friends and colleagues”.

# Our Team's T-Shirt Design



Zach Trainor 2013



# Ways you can listen (here or anywhere)

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- (1) Soundwalks - through RMNP or your neighborhood and make note of how sounds change throughout the season. Along the way listen or record anthrophony, geophony, and biophony to understand acoustic niches.
- (2) Participate in the GSSN Record the Earth project and upload your sounds.
- (3) Ask your school to participate in UNC's sound mapping project.
- Funding provided by UNC Provost Fund, Hewit Foundation for Social Sciences, Continental Divide Research Learning Center, RMNP